



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,161	05/16/2005	Karl-Ragmar Riemschneider	DE02 0263 US	2372
24738 7590 03/15/2007 PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 1109 MCKAY DRIVE, M/S-41SJ SAN JOSE, CA 95131			EXAMINER MURALIDAR, RICHARD V	
			ART UNIT	PAPER NUMBER
			2838	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/15/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

84

Office Action Summary	Application No. 10/535,161	Applicant(s) RIEMSCHEIDER, KARL-RAGMAR	
	Examiner Richard V. Muralidar	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The applicant, in the remarks received 12/14/2006, did not address any of the previously presented objections to the specification and claims. These objections must be addressed in order to prevent abandonment of the application.

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a *separate sheet* is required.

The specification is objected to because it lacks the proper layout. The following guidelines illustrate the preferred layout for the specification of a utility application.

These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

Art Unit: 2838

- (I) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

Claims 1-19 are objected to because of the following informalities: "A" or "The" as appropriate should precede all the claims in order to make the preambles grammatically correct. For example, claim 1 should read "A system for automated management of batteries." Claim 2 should read "The system according to..." etc. Appropriate correction is required.

Claim 4 is objected to for omission of a word. The word "are" appears to be missing in line 3 between "cells" and "adjusted": "...plurality of battery cells adjusted to each other."

Claim 5 is objected to because line 4 reads "...surrounded by robust and chemically resistant material. Either the letter "a" is missing between "by" and "robust" or the singular "material" should be plural "materials". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 2838

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Potega [U.S. 6459175].

With respect to claim 8, Potega discloses cell unit [Figs. 10 and 13; battery device 43/power source 701] for measuring physical parameters of battery cells [col. 49 lines 36-40], the cell unit comprising a cell unit transmitter for a transmission of the measured values of physical parameters of the battery cells via a wireless communication link [col. 54 lines 24-67 and col. 55 lines 1-15. Fig. 10 shows controllable regulator 25 that adjusts the output of charger 92 which charges battery device 43. Fig. 13 shows the two are in wireless communication across IR ports 713 and 729].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. [U.S. 6583602] in view of Potega et al. [U.S. 6459175].

With respect to claim 1, Imai discloses system for automated management of batteries [col. 2 lines 5-10], the batteries [Fig. 2, battery 121, 122] comprising at least one battery cell [cells 111A-114A and 115A-119A], the system comprising: at least one

Art Unit: 2838

cell unit [Fig. 3, comparators 34(1), 34(2)] for measuring physical parameters [the voltages of each cell are measured- col. 15 lines 48-52] of the at least one battery cell; a control unit [Fig. 3, logic circuit 35]; and a transmitter for transmitting the measured values of the physical parameters to the control unit via a communication link [the measured voltage values are transmitted from each comparator to the logic circuit 35 for processing, along the arrows indicated in Fig. 3; col. 15 lines 48-60]. Imai does not disclose a wireless communications link to transmit the measured values to the control unit.

Potega discloses a transmitter for transmitting the measured values of the physical parameters to the control unit via a first wireless communication link [col. 54 lines 24-67 and col. 55 lines 1-15. Fig. 10 shows controllable regulator 25 that adjusts the output of charger 92 which charges battery device 43. Fig. 13 shows the two are in wireless communication across IR ports 713 and 729].

Imai and Potega are analogous power supplies and means of controlling them.

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify wireless as a means of data transmission as taught by Potega [col. 13 lines 31-34] between the cell unit [Fig. 10, battery device 43] and the control unit [Fig. 10, intelligent power supply 64] for the widely known benefits benefit of being able to operate remotely over long ranges, as well as the cost savings involved in not having to run wire or fiber optics over great distances.

With respect to claim 4, Imai discloses that a battery [Fig. 2, battery 121, 122] comprises a plurality of battery cells [cells 111A-114A and 115A-119A], and wherein

the switching unit [Fig. 2, switch 20] is adapted to perform a charge balancing [Fig. 2, SOC balancer 231, 232] such that charging states of the plurality of battery cells adjusted to each other [col. 14 lines 4-20].

With respect to claim 14, Imai discloses method [col. 2 lines 8-10] for automated management of batteries [col. 2 lines 5-10], the batteries [Fig. 2, battery 121, 122] comprising at least one battery cell [cells 111A-114A and 115A-119A], the method comprising the steps of: measuring of physical parameters [the voltages of each cell are individually measured- col. 15 lines 48-52] of the at least one battery cell by at least one cell unit [comparators 34(1), 34(2)]; transmitting the measured values of the physical parameters via a first communication link to a control unit [the measured voltage values are transmitted from each comparator to the logic circuit 35 for processing, along the arrows indicated in Fig. 3; col. 15 lines 48-60]. Imai does not disclose a wireless communications link to transmit the measured values to the control unit. Potega discloses the wireless link, as discussed above.

Claims 1-3, 5, 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborne [U.S. 2004/0164706] in view of Potega et al. [U.S. 6459175].

With respect to claim 1, Osborne discloses system for automated management of batteries [page 1 par. 0001], the batteries [Fig. 2, batteries B1-B10] comprising at least one battery cell [B1 shows 2 cells], the system comprising: at least one cell unit [Fig. 2, battery/remote management unit 1] for measuring physical parameters [page 4 par. 0071] of the at least one battery cell; a control unit [central controller 3, page 3 par.

0064]; and a transmitter for transmitting the measured values of the physical parameters to the control unit via a communication link [Fig. 2, bidirectional RS485 communications link 13; page 3 par. 0064]. Osborne does not disclose a wireless communications link to transmit the measured values to the control unit.

Potega discloses a wireless means of communication, as described in above claim 1.

With respect to claim 2, Potega discloses that the control unit [Fig. 10, intelligent power supply 64] comprises a control unit transmitter [col. 54 lines 58-66] for transmitting control signals to the at least one cell unit [Fig. 10, battery device 43] via a second wireless communication link [Fig. 13, IR port 713 transmits bi-directionally to and from IR port 729].

With respect to claim 3, Potega discloses that a switching unit is provided; and wherein the switching unit [Fig. 2, switch 14] is adapted for temporarily establishing a controllable current path between poles of the at least one battery cell [from the power source 1 to the battery 5 positive, then returning through the negative post to the power source 1- col. 32 lines 45-56].

With respect to claim 5, Potega discloses the at least one cell unit [Fig. 10, battery device 43] is at least partially disposed in an interior region of the at least one battery cell for providing direct contact to an electrolyte [col. 49 lines 48-52- the green eye indicator is a type of hydrometer tester] of the at least one battery cell; and wherein the at least one cell unit is at least partially surrounded by robust and chemically

Art Unit: 2838

resistant material [the green eye sensor will inherently be chemically resistant since it is designed to be used with battery electrolyte].

With respect to claim 6, Osborne discloses a communication link [page 3 par. 0064- RS485] between the cell units [battery/remote management unit (BMU) 1 with battery B1-B10] for direct communication with one another [page 3 par. 0069; each microcontroller 6 inside of each BMU 1 communicate with other microcontrollers 6].

With respect to claim 7 Osborne discloses that the at least one cell unit [battery/remote management unit (BMU) 1 with battery B1-B10] comprises at least one of: electric leads [Fig. 2, RS 485 lead 2 or the leads to power supply 14]; a storage [Fig. 2, battery B1-B10]; and a controllable rectifier/charger [Fig. 2, local battery charger 7; page 4 par. 0075; a controllable rectifier is implicit to this charger as evident from pars. 0077, 0078, and 0082]; wherein the storage is adapted for storing electric energy, and wherein the controllable charger is adapted for controlling the charging of the at least one battery cell [Fig. 2, page 4 par. 0077, 0078]. Osborne does not disclose the use of high frequency decouplers.

Potega discloses the use of powerline modulation, wherein the electric leads comprise high frequency decouplers for converting high frequency electromagnetic radiation into electric energy [col. 13 lines 31-42].

Osborne and Potega are analogous power management systems.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize powerline modulation as a means of communication between the cell unit and the controller for the known benefit of combining both the power supply

and the data signals into the same transmission means. This has cost savings since an additional data transfer means, such as RS485, would no longer be required.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potega et al. [U.S. 6459175] in view of Osborne [U.S. 2004/0164706].

With respect to claim 9, Potega discloses a switching unit [Fig. 2, switch 14] is provided; but does not disclose a charge balancing function across battery cells.

Osborne discloses that the switching unit [Fig. 2, relay 17] is adapted to perform a charge balancing such that the charging states of the battery cells [B1-B10] are adjusted to each other [page 4 par. 0066, 0075, 0082].

Osborne and Potega are analogous power management systems for batteries. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide multiple batteries, with a charge balancing function, to Potega for the benefit of extending the operational time of the supplied device 54 [laptops, etc.], and for the further benefit of extending the lifespan of the multiple batteries by ensuring they were all balanced.

With respect to claim 10, Osborne discloses that the at least one cell unit [battery/remote management unit (BMU) 1 with battery B1-B10] comprises at least one of: electric leads [Fig. 2, RS 485 lead 2 or the leads to power supply 14]; a storage [Fig. 2, battery B1-B10]; and a controllable rectifier/charger [Fig. 2, local battery charger 7; page 4 par. 0075; a controllable rectifier is implicit to this charger as evident from pars. 0077, 0078, and 0082]; wherein the storage is adapted for storing electric energy, and wherein the controllable charger is adapted for controlling the charging of the at least

one battery cell [Fig. 2, page 4 par. 0077, 0078]. Osborne does not disclose the use of high frequency decouplers.

Potega discloses the use of powerline modulation, wherein the electric leads comprise high frequency decouplers for converting high frequency electromagnetic radiation into electric energy [col. 13 lines 31-42].

Osborne and Potega are analogous power management systems.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize powerline modulation as a means of communication between the cell unit and the controller for the known benefit of combining both the power supply and the data signals into the same transmission means. This has cost savings since an additional data transfer means, such as RS485, would no longer be required.

With respect to claim 11, Osborne discloses control unit [central controller 3, page 3 par. 0064] for receiving measured values of physical parameters of battery cells [page 4 par. 0071, 0072], the control unit comprising a control unit transmitter for transmitting control signals [page 3 par. 0069] to a cell unit [Fig. 2, battery/remote management unit 1]; wherein the measured values are received via a first communication link; and wherein the control signals are transmitted via a second communication link [Fig. 2, bidirectional RS485 communications link 13; page 3 par. 0064]. Osborne does not disclose the communication link being wireless.

Potega discloses a wireless communication link [col. 54 lines 24-67 and col. 55 lines 1-15. Fig. 13 shows the two are in wireless communication across IR ports 713 and 729].

Imai and Potega are analogous power supplies and means of controlling them.

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify wireless as a means of data transmission as taught by Potega [col. 13 lines 31-34] between the cell unit [Fig. 10, battery device 43] and the control unit [Fig. 10, intelligent power supply 64] for the widely known benefits benefit of being able to operate remotely over long ranges, as well as the cost savings involved in not having to run wire or fiber optics over great distances.

With respect to claim 12, Osborne discloses that the control signals provide synchronization information to the cell unit [page 4 par. 0073].

With respect to claim 13, Osborne discloses that the control unit addresses each cell unit individually; wherein the control unit initiates the measurement of the physical parameters of the battery cells; wherein the control unit requests the transmission of measured values of the physical parameters [page 4 par. 0073, 0074, 0081].

With respect to claim 14, Osborne discloses method for automated management of batteries [page 1 par. 0001], the batteries [Fig. 2, battery B1-B10] comprising at least one battery cell [Fig. 2, 2 cells per battery are shown], the method comprising the steps of: measuring of physical parameters [page 4 par. 0071] of the at least one battery cell by at least one cell unit [Fig. 2, remote/battery management unit 1]; transmitting the measured values of the physical parameters via a first communication link to a control unit [page 4 par. 0072]. Osborne does not disclose a wireless communications link to transmit the measured values to the control unit.

Potega discloses a wireless communication link [col. 54 lines 24-67 and col. 55 lines 1-15. Fig. 13 shows the two are in wireless communication across IR ports 713 and 729].

Imai and Potega are analogous power supplies and means of controlling them.

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify wireless as a means of data transmission as taught by Potega [col. 13 lines 31-34] between the cell unit [Fig. 10, battery device 43] and the control unit [Fig. 10, intelligent power supply 64] for the widely known benefits benefit of being able to operate remotely over long ranges, as well as the cost savings involved in not having to run wire or fiber optics over great distances.

With respect to claim 15, Osborne discloses individually controlling a charge of the at least one battery cell [0071]; transmitting individual control signals from the control unit to the at least one cell unit via a second communication link [page 3 par. 0064]. Osborne does not disclose wireless communications. Potega discloses the use of wireless communications, as recited in claim 14.

With respect to claim 16, Osborne discloses that each cell unit [Fig. 2, battery/remote management unit 1] measures the physical parameters of a respective group of battery cells [Fig. 2, battery B1-B10, page 4 par. 0071], the groups comprising at least one battery cell [two cells are shown for each battery in Fig., 2]; wherein each battery cell belongs to at least two groups [Fig. 2, the first group is battery B1 itself, which is a member of the group G1 in Fig. 1, which is itself a member of string 18]; wherein the measured values of the physical parameters of particular groups are

Art Unit: 2838

subtracted from one another or otherwise processed for obtaining the physical parameters of individual battery cells [page 5 par. 0085- central controller 3 applies a boost charge between cells if it detects the voltages are too far out of range with each other. The same applies for discharging par. 0079. Subtraction is intrinsically taking place in the form of comparing a current charge to a known charge, then charging/discharging as needed to make up the difference].

With respect to claim 17, Potega discloses that a density or a fill level of electrolyte [col. 49 lines 48-52- the green eye gauge monitor detects specific gravity, which is density] in the at least one battery cell is measured by detecting a change in an emitted electromagnetic signal [the change is SOC due to change in specific gravity is transmitted wirelessly through IR ports 713 and 729].

With respect to claim 18, Potega discloses that signals are transmitted by at least one technique selected from the group consisting of: transmission of electromagnetic waves, inductive transmission, transmission of light, transmission of sound, and transmission of ac currents [col. 13 lines 31-42].

With respect to claim 19, Osborne disclose that a charge balancing is performed to adapt charges of a plurality of battery cells [page 4 par. 0066, 0075, 0082] to each other by temporarily establishing a current path [Fig. 2, through closing of relay 17] between poles of the plurality of battery cells [Fig. 2, B1-B10].

Response to Arguments

Applicant's arguments filed 12/14/2006 have been fully considered but they are not persuasive.

Applicant comments on page 2 of REMARKS that applicant was unable to find within Potega [U.S. 6459175] *"the specific teaching of measuring physical parameters of the battery cell and transmitting the measured values of the physical parameters to a control unit via a wireless communication link."* As given in the rejection above to claim 1, Imai [U.S. 6583602] discloses measuring physical parameters [the voltages of the cells are measured- col. 15 lines 48-52] of the battery cell [Fig. 3, the cells of battery pack 31] and transmitting the measured values of the physical parameters to a control unit [Fig. 3, logic circuit 35 controls the switching of transistors 371, 372...37N] via a communication link [the communication link is the circuit indicated by the arrows from comparators 34 into logic circuit 35]. This is a communications link because binary signals are outputted by the comparators and detected by the logic circuit 35 [col. 15 lines 50-53 and 56-64].

As indicated above, Imai did not disclose a **wireless** communications link over which the physical parameters are transmitted. Potega provides this wireless communications link between power supply and controller in Figs. 10 and 13, col. 54 lines 58-66. The benefits of using wireless communication means are well known and given in the claim 1 rejection above. Cell voltages are transmitted over this link- col. 54 lines 10-13.

If the applicant feels a limitation is missing from the cited figures and column numbers, then the applicant must specifically point out what is missing, by comparing the recited limitations to what is given, and presenting a convincing argument.

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard V. Muralidar whose telephone number is 571-272-8933. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl D. Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

3/12/2007
RVM



KARL EASTHOM
SUPERVISORY PATENT EXAMINER